

<<高等数学(上)>>

图书基本信息

书名：<<高等数学(上)>>

13位ISBN编号：9787563527328

10位ISBN编号：756352732X

出版时间：2011-9

出版时间：北京邮电大学出版社

作者：北京邮电大学高等数学双语教学组 编

页数：353

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

<<高等数学（上）>>

内容概要

本书是根据国家教育部非数学专业数学基础课教学指导分委员会制定的工科类本科数学基础课程教学基本要求编写的全英文教材，全书分为上、下两册，此为上册，主要包括函数与极限，一元函数微积分及其应用和无穷级数三部分。

本书对基本概念的叙述清晰准确，对基本理论的论述简明易懂，例题习题的选配典型多样，强调基本运算能力的培养及理论的实际应用。

本书可作为高等理工科院校非数学类专业本科生的教材，也可供其他专业选用和社会读者阅读。

<<高等数学(上)>>

书籍目录

- chapter 0 preliminary knowledge
 - 0.1 polar coordinate system
 - 0.1.1 plotting points with polar coordinates
 - 0.1.2 converting between polar and cartesian coordinates
 - 0.2 complex numbers
 - 0.2.1 the definition of the complex number
 - 0.2.2 the complex plane
 - 0.2.3 absolute value, conjugation and distance
 - 0.2.4 polar form of complex numbers
- chapter 1 theoretical basis of calculus
 - 1.1 sets and functions
 - 1.1.1 sets and their operations
 - 1.1.2 mappings and functions
 - 1.1.3 the primary properties of functions
 - 1.1.4 composition of functions
 - 1.1.5 elementary functions and hyperbolic functions
 - 1.1.6 modeling our real world
 - exercises 1.1
 - 1.2 limits of sequences of numbers
 - 1.2.1 the sequence
 - 1.2.2 convergence of a sequence
 - 1.2.3 calculating limits of sequences
 - exercises 1.2
 - 1.3 limits of functions
 - 1.3.1 speed and rates of change
 - 1.3.2 the concept of limit of a function
 - 1.3.3 properties and operation rules of functional limits
 - 1.3.4 two important limits
 - exercises 1.3
 - 1.4 infinitesimal and infinite quantities
 - 1.4.1 infinitesimal quantities and their order
 - 1.4.2 infinite quantities
 - exercises 1.4
 - 1.5 continuous functions
 - 1.5.1 continuous function and discontinuous points
 - 1.5.2 operations on continuous functions and the continuity of elementary functions
 - 1.5.3 properties of continuous functions on a closed interval
 - exercises 1.5
- chapter 2 derivative and differential
 - 2.1 concept of derivatives
 - 2.1.1 introductory examples

<<高等数学(上)>>

- 2.1.2 definition of derivatives
- 2.1.3 geometric interpretation of derivative
- 2.1.4 relationship between derivability and continuity
- exercises 2.1
- 2.2 rules of finding derivatives
 - 2.2.1 derivation rules of rational operations
 - 2.2.2 derivative of inverse functions
 - 2.2.3 derivation rules of composite functions
 - 2.2.4 derivation formulas of fundamental elementary functions
- exercises 2.2
- 2.3 higher-order derivatives
- exercises 2.3
- 2.4 derivation of implicit functions and parametric equations, related rates
 - 2.4.1 derivation of implicit functions
 - 2.4.2 derivation of parametric equations
 - 2.4.3 related rates
- exercises 2.4
- 2.5 differential of the function
 - 2.5.1 concept of the differential
 - 2.5.2 geometric meaning of the differential
 - 2.5.3 differential rules of elementary functions
- exercises 2.5
- 2.6 differential in linear approximate computation
- exercises 2.6
- chapter 3 the mean value theorem and applications of derivatives
 - 3.1 the mean value theorem
 - 3.1.1 rolle's theorem
 - 3.1.2 lagrange's theorem
 - 3.1.3 cauchy's theorem
 - exercises 3.1
 - 3.2 l'hospital's rule
 - exercises 3.2
 - 3.3 taylor's theorem
 - 3.3.1 taylor's theorem
 - 3.3.2 applications of taylor's theorem
 - exercises 3.3
 - 3.4 monotonicity and convexity of functions
 - 3.4.1 monotonicity of functions
 - 3.4.2 convexity of functions, inflections
 - exercises 3.4
 - 3.5 local extreme values, global maxima and minima
 - 3.5.1 local extreme values
 - 3.5.2 global maxima and minima

<<高等数学(上)>>

exercises 3.5

3.6 graphing functions using calculus

exercises 3.6

chapter 4 indefinite integrals

4.1 concepts and properties of indefinite integrals

4.1.1 antiderivatives and indefinite integrals

4.1.2 properties of indefinite integrals

exercises 4.1

4.2 integration by substitution

4.2.1 integration by the first substitution

4.2.2 integration by the second substitution

exercises 4.2

4.3 integration by parts

exercises 4.3

4.4 integration of rational fractions

4.4.1 integration of rational fractions

4.4.2 antiderivatives not expressed by elementary

functions

exercises 4.4

chapter 5 definite integrals

5.1 concepts and properties of definite integrals

5.1.1 instances of definite integral problems

5.1.2 the definition of definite integral

5.1.3 properties of definite integrals

exercises 5.1

5.2 the fundamental theorems of calculus

exercises 5.2

5.3 integration by substitution and by parts in definite integrals

5.3.1 substitution in definite integrals

5.3.2 integration by parts in definite integrals

exercises 5.3

5.4 improper integral

5.4.1 integration on an infinite interval

5.4.2 improper integrals with infinite

discontinuities

exercises 5.4

5.5 applications of definite integrals

5.5.1 method of setting up elements of integration

5.5.2 the area of a plane region

5.5.3 the arc length of a curve

5.5.4 the volume of a solid

5.5.5 applications of definite integral in physics

exercises 5.5

chapter 6 infinite series

6.1 concepts and properties of series with constant terms

<<高等数学 (上)>>

6.1.1 examples of the sum of an infinite sequence)

6.1.2 concepts of series with constant terms

6.1.3 properties of series with constant terms

exercises 6.1

6.2 convergence tests for series with constant terms

6.2.1 convergence tests of series with positive terms

6.2.2 convergence tests for alternating series

6.2.3 absolute and conditional convergence

exercises 6.2

6.3 power series

6.3.1 functional series

6.3.2 power series and their convergence

6.3.3 operations of power series

exercises 6.3

6.4 expansion of functions in power series

6.4.1 taylor and maclaurin series

6.4.2 expansion of functions in power series

6.4.3 applications of power series expansion of

functions

exercises 6.4

6.5 fourier series

6.5.1 orthogonality of the system of trigonometric

functions

6.5.2 fourier series

6.5.3 convergence of fourier series

6.5.4 sine and cosine series

exercises 6.5

6.6 fourier series of other forms

6.6.1 fourier expansions of periodic functions with period

2l

6.6.2 complex form of fourier series

exercises 6.6

bibliography

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>